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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,352	11/29/2005	Hiroshi Nakano	63027 (71360)	8860
21874 7590 06/29/2007 EDWARDS ANGELL PALMER & DODGE LLP P.O. BOX 55874 BOSTON, MA 02205			EXAMINER BOYKIN, TERRESSA M	
			ART UNIT 1711	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<p align="center"><b>Office Action Summary</b></p>	<p>Application No.</p> <p align="center">10/527,352</p>	<p>Applicant(s)</p> <p align="center">NAKANO ET AL.</p>	
	<p>Examiner</p> <p align="center">Terressa M. Boykin</p>	<p>Art Unit</p> <p align="center">1711</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 09 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

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### **Abstract**

Applicant is reminded of the proper language and format of an Abstract of the Disclosure.

The abstract should be in narrative form and limited to a **single paragraph** on a separate sheet **within the range of 50 to 250 words**. The printer will no longer accept Abstracts that are more than 25 lines, regardless of the number of words. The form and legal phraseology often used in patent claims, such as "means" and "said", should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### **Claim Rejections - 35 USC § 112**

**Claims 1 - 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Applicants wording is confusing in that it is not clear whether the main component ,...polycarbonate having... is the description of the sizing die itself or is the polycarbonate-based resin composition. As written, the description refers back to the sizing die and it does not appear to be applicant's intent. Correction and clarification required.

### **Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-28 are rejected under 35 U.S.C. 102(b or e) as being anticipated by USP 4541884 see cols. 1-5 and claims 1.,2. and 9 and USPub TABLES 1-9 Claims 1-14, 15-27, 37 -38, 41-42, and 45; or USPub 20030175488 see pages 1-7.**

Applicants claims are directed to: A polycarbonate-based resin composition for extrusion molding using a sizing die, comprising as a main component, a polycarbonate having a viscosity-average molecular weight of 17000 to 27000 and containing main repeating units represented by the following formula (A): wherein an amount of proton (Pa) and an amount of proton (Pb) per 1 g of the polycarbonate which are calculated from respective integral values of a signal (a) detected at  $\delta = 7.96$  to  $8.02$  ppm and a signal (b) detected at  $\delta = 8.11$  to  $8.17$  ppm in  $^1\text{H-NMR}$  spectra thereof as measured in a deuterated chloroform solvent, satisfy the following formula  $(1): 4 \leq [(Pa) + (Pb)] \leq 26$  (1) wherein a unit of each of (Pa) and (Pb) is  $\mu\text{mol/g}$ .

**USP 4541884** discloses a process of producing a fiber-reinforced composition comprising drawing a plurality of continuous filaments through a melt comprising a mixture of a thermoplastic polymer and a plasticizer for the polymer in the weight ratio between 1:4 and 99:1 of polymer to plasticizer .

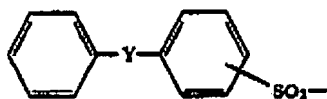
The impregnated products of the processes hereinbefore described may be wound on rolls for subsequent use in fabrication processes requiring a continuous product or may be chopped into lengths for subsequent fabrication. These may be used in conventional molding or extrusion processes.

The thermoplastic polymers used in the process of the invention are preferably those containing aromatic repeat units in the chain, such as polysulphones, . . . ., aromatic polyesters, aromatic polycarbonates and polyetherimides.

Another particularly useful class of compounds are the aromatic polysulphones.

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Thermoplastic aromatic polysulphones generally have at least some units of the structure



where Y is O or S or the residue of an aromatic diol such as a **4,4'-bisphenol**.

The method enables reinforced articles to be formed in versatile operations, such as injection molding, which employ screw extrusion processes to melt and homogenize the feed material, with a surprisingly high retention of fiber length and consequent enhancement of physical properties. Thus the product of the invention enables molded articles to be obtained from fabrication processes which employ screw extrusion which articles contain at least 50% and preferably at least 70% by weight of the fibers in the article of a length at least 3 mm long. The products suitable for injection molding may be used directly or may be blended with pellets of other thermoplastics products.

The general procedure of Example 1 was used to prepare pultrusion from PEEK/plasticizer melts of various melt viscosities in order to compare the quality of the product with that of the control run of Example 1 and to demonstrate the applicability of the process to very high molecular weight polymer.

The general procedure of Example 1 was used to impregnate continuous carbon fiber roving (AS4 supplied by Hercules Corp) using a polymer of methyl methacrylate ('Diakon' MG obtainable from Imperial Chemical Industries PLC) having a melt viscosity of 1200 Ns/m.<sup>sup.2</sup> at 250.degree. C. and zero shear rate and methyl methacrylate monomer as the melt plasticizer. The procedure was carried out using a weight ratio of polymer to monomer of 1:1 at a melt temperature of 250.degree. C. and a pull through

of 30 cm/minute. A product containing 43% by weight of fiber was produced with fair impregnation. The procedure was repeated using a polymer/monomer ratio of 1:9. A well impregnated product having a fiber content of 78% was produced.

A single roving of Courtaulds XAS--O carbon fiber containing 12,000 filaments was drawn through an enclosed melt bath, fed from an extruder, containing a molten mixture of PEEK and diphenyl sulphone plasticizer at a weight ratio of 1:1 at a temperature of 380.degree. C. After passing successively under and over eight spreader bars situated in the melt the impregnated roving was drawn through a sizing die of circular cross section 1.28 mm in diameter. Any excess melt was scraped off by the die giving a product containing 38% by volume of fiber in the mixture of plasticizer and polymer. The lace was subsequently flattened to a tape by drawing it over further heated spreader bars at approximately 400.degree. C. The plasticizer was volatilized giving an impregnated tape containing 55% by volume of carbon fiber and less than 0.5% by weight of plasticizer. It was possible to achieve excellent impregnation by drawing the fiber through the bath and the die at least 5 m/minute. The process ran without any fiber attrition at the die.

In a control experiment the same procedure was used, with the same polyetheretherketone, but without plasticizer. In order to obtain a 55% by volume content of fibers it was necessary to reduce the sizing die diameter to 1.06 mm. It was found that in order to get reasonable impregnation it was necessary to pull the fiber through at not greater than 0.3 m/minute. After about 100 m of roving had been hauled through the fiber attrition at the die caused a die blockage and a break in the roving. This behavior could not be improved on without substantially decreasing the fiber volume content.

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comprising resorcinol arylate chain members.

Thermoset plastics are commonly used for automotive body panels including appearance parts, having to undergo extensive surface preparation to provide a weatherable, smooth, glossy surface, which always requires a coating of some type. Applicants have found that substrate comprising resorcinol arylate chain members may be use as a weatherable surface with high gloss and hardness, providing a class "A" finish in thermoset molding, for use in automotive parts. Applicants have also found that the use of certain tie-layers surprisingly increase the adhesion between layers of a multilayer article, with a coating layer comprising resorcinol arylate chain members and the substrate layer, or the adhesion between the multilayer article comprising a coating layer of resorcinol arylate chain members and a substrate layer with another surface. We have also found that the adhesion between the layers can be significantly improved by various surface modification methods, by modifying the surface of at least one of the layers in a multilayer article.

In one embodiment, the outer layer is a blend of polymers comprising resorcinol arylate polyester chain members and at least one other polymer selected from at least one of miscible, immiscible, and compatibilized blends including but not limited to: polycarbonates, polyesters, polyetherimides, polyphenylene ethers, PC/ABS, PC/ASA, PC/PBT, PC/PET, PC/polyetherimide, polyamide, polyester/polyetherimide, polyphenylene ether/polystyrene, polyphenylene ether/polyamide, polyphenylene ether/polyester, blends, regrinds and foams of any of the above.

The composition may additionally contain art-recognized additives including but not limited to metal flakes, pigments, dyes, impact modifiers, UV screeners, flame retardants, fillers, stabilizers, flow aids, ester interchange inhibitors, and mold release agents. Pigments include both clear pigments such as inorganic siliceous pigments (silica pigments for example) and conventional pigments used in coating compositions.

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In one preferred embodiment, the weatherable coating layer is a clear layer with no pigment or dye in the composition.

The weatherable coating layer may be produced as a separate layer, followed by application to a second layer of the multilayer article of the present invention. It can also be produced by simultaneous productions of the layers in a production process. Thus, the weatherable coating layer may be produced and employed in such methods but not limited to molding, extrusion, co-injection molding, co -extrusion, overmolding, coating, and the placement of the layer onto the surface of a second layer.

Substrate Layer. In one embodiment of the invention, the article comprises a substrate which functions as a support layer or a "colored" layer. The substrate includes but not is limited to one of a film layer or layers, a sheet layer or layers, a multi-wall sheet ("MWS"), a molded polymer substrate, a pre-formed metal substrate or combinations thereof, with the outer weatherable layer comprising resorcinol arylate polyester chain members being adhered to at least one side of the substrate layer.

In one embodiment, the support layer may comprise any of a thermoplastic such as an aromatic polycarbonate, a polyester, a polyamide, a polyolefin, a thermoplastic polyolefin (TPO), a polyacrylonitrile (e.g., ABS), acrylic-styrene-acrylonitrile (ASA), acrylonitrile-(ethylene-polypropylene diamine modified)-styrene (AES), phenylene ether resins, blends of polyphenylene ether/polyamide (NORYL GTX.RTM. from General Electric Company), blends of polycarbonate/polybutylene terephthalate and impact modifier (XENOY.RTM. resin from General Electric Company), blends of polycarbonate/PET/PBT, polyamides, phenylene sulfide resins, polymethylmethacrylate (PMMA), High-impact Polystyrene (HIPS), polystyrene, poly(vinyl chloride) PVC, a copolyestercarbonate, a poly(alkylene dicarboxylates), methacrylic ester polymers and copolymers or blends thereof, which can be melt -extruded into shaped articles such as films and sheets.



In another embodiment, the substrate layer is a molded polymer substrate selected to provide the required engineering properties, e.g., rigidity, etc., suited to the specific end-use of the multilayer article. Suitable polymers for the substrate include, for example, polyvinyl chloride, polycarbonate, polystyrene, acrylonitrile-butadiene-styrene, polyethylene, polypropylene, polyethylene terephthalate, nylon, and RIM urethanes. Polypropylene, for example, when glass filled and foamed with a blowing agent, is a suitable polymer for the molded substrate. Acid copolymers of polyethylene such as SURLYN (a trademark of E.I. DuPont de Nemours) are also suitable. In one embodiment, the substrate layer is a molded substrate comprising RIM urethanes. Urethane polymers useful for preparing the molded substrate are typically prepared by reacting a polyisocyanate with a compound containing at least two active hydrogen atoms, such as a polyol, a polyamine, or a polyisocyanate.

The dihydric phenol which may be employed to provide such aromatic carbonate polymers are mononuclear or polynuclear aromatic compounds, containing as functional groups two hydroxy radicals, each of which maybe attached directly to a carbon atom of an aromatic nucleus. Typical dihydric phenols are: 2,2-bis(4-hydroxyphenyl) propane; hydroquinone; resorcinol; 2,2-bis(4-hydroxyphenyl)pentane; 2,4'-(dihydroxydiphenyl) methane; bis(2-hydroxyphenyl) methane; bis(4-hydroxyphenyl) methane; 1,1-bis(4-hydroxyphenyl)-3,3,5-trimethylcyclohexane; fluorinate bisphenol, 1,1-bis(4-hydroxyphenyl) ethane; 3,3-bis(4-hydroxyphenyl)pentane; 2,2'-dihydroxydiphenyl; 2,6-dihydroxynaphthalene; bis(4-hydroxydiphenyl)sulfone; bis(3,5-diethyl-4-hydroxyphenyl)sulfone; 2,2-bis(3,5-dibromo-4-hydroxyphenyl)propane; 2,2-bis(3,5-dimethy-4-hydroxyphenyl)propane; 2,4'-dihydroxydiphenyl sulfone; 5'-chloro-2,4'-dihydroxydiphenyl sulfone; 4,4'-dihydroxydiphenyl ether; 4,4'-dihydroxy-3,3'-dichlorodiphenyl ether, spiro biindane bisphenol, *and the like*.

Either virgin materials or regrind (or recycled) materials can be used in the substrate

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layer. Examples of recycled engineering plastics for use in the substrate layer include polycarbonate, polyphenylene ether, many of the polyesters and polyester blends, polyamides, acetal polymers and copolymers, thermoplastic polyurethanes, polyarylates which are based on resorcinol, and the like.

In one example of automotive applications, the substrate layer comprises polycarbonate resin (as a color and adhesive layer) since polycarbonate adheres to both the coating layer comprising resorcinol arylate polymer and to another substrate system, e.g., thermoset resins systems as SMC and BMC. The thickness of the multilayer article comprising a polycarbonate substrate layer and the coating layer is chosen to be sufficient to cover minor surface blemishes on the SMC/BMC parts resulting in a durable, high grade, even class "A" finish required for automotive applications. The high concentration of styrene monomer at elevated temperature and pressure do not appear to affect the polycarbonate/resorcinol arylate polymer multilayer film article in any way. Even after long exposure of the polycarbonate, there does not appear to be any crazing of the surface due to solvent effects of the styrene monomer.

The substrate layer may include art-recognized additives typically known for inclusion in films and sheets, including pigments, a colorant or decorative material such as metal flakes, dyes, luminescent compounds, impact modifiers, UV screeners, flame retardants, fillers, stabilizers, flow aids, ester interchange inhibitors, adhesion promoting agents such as a bisphenol derivative, an aminosilane or derivatives, and mold release agents. Conventional pigments include metallic oxides such as titanium dioxide, and iron oxide; metal hydroxides; metal flakes such as aluminum flake; chromates such as lead chromate; sulfides; sulfates; carbonates; carbon black; silica; talc; china clay; phthalocyanine blues and greens, organo reds; organo maroons and other organic pigments and dyes.

In one embodiment, the tie-layer is a compatible blend of: a) at least one of

polycarbonate or a resorcinol arylate containing resin; and b) at least one of an ester containing resin, a polyester carbonate containing resin, a resorcinol arylate containing resin and blends thereof. In another embodiment, the tie-layer is a polyester selected from the group of: PET, PETG, PBT, PPT, PEN, PBN, PCT, PCTA, PCTG, PCCD and the like. In yet another embodiment, the tie-layer is a transparent polyester selected from the group of PETg, PCT, PCTg, PCCD.

In another embodiment of a tie-layer, the material is a compatible blend of polyester and polycarbonate, e.g., transparent polyester /polycarbonate blends prepared from PETg, PCT, PCTA, PCTg, and PCCD and BPA polycarbonate. The BPA polycarbonate can be either linear or branched. In one example, the tie-layer is a blend of about 20 to 40% PETg and 60 to 80% polycarbonate. In another example, the tie-layer is a compatible blend of a PCT and BPA having about 10 to 100% PCT and 0 to 90% polycarbonate. In a third example, the tie-layer is a compatible blend of a PCTA and BPA polycarbonate, containing about 10 to 100% PCTA and 0 to 90% polycarbonate.

In one embodiment of a compatible blend of: a) a resin comprising polyester with polycarbonate; and b) a resin comprising resorcinol arylate units, the transparent polyester /polycarbonate blends are prepared from PBT, PET, PETg, PCT, PCTA, PCTG. In one embodiment, the resorcinol arylate resin contains from 70 to 95% resorcinol arylate units and from 5 to 30% BPA and resorcinol carbonate units.

In one embodiment of a tie-layer containing a blend of materials constituting the substrate layer and the coating layer, the tie-layer is a transparent blend of a poly(1,4-cyclohexanedimethyl-1,4-cyclohexanedicarboxylate) ("PCCD") and polycarbonate. Applicants have found that use of a blend of PCCD and polycarbonate afford a layer with ductility, and increased adhesion between the weatherable coating layer and a support layer of polycarbonate. The blends of PCCD/PC have excellent clarity, physical and mechanical properties. In one embodiment, the blend comprises about 20 to 100

wt. % PCCD and about 80 to 0 wt. % of the polycarbonate.

In another embodiment, the tie-layer is a compatible blend of a resin comprising of a resorcinol arylate and a copolymer comprising of BPA arylates and BPA carbonates.

Suitable copolyestercarbonates are comprised of aromatic BPA polycarbonate units and aromatic polyester units.

Applicants have found that blends of polyestercarbonate and ITR are compatible with increased heat deflection temperature (HDT), ductility, and increased adhesion between the weatherable coating layer and a support layer of polycarbonate. Applicants have surprisingly found that only a small portion of these blends afford a layer with excellent clarity. Furthermore, the clarity of the polyestercarbonate/ITR tie-layer varies depending on the concentration of polyestercarbonate employed, the amount of ester groups in the polyestercarbonate and the amount of resorcinol arylate groups in the ITR.

In another embodiment of a tie-layer containing a blend of materials constituting the support layer and the coating layer, the tie-layer is a compatible blend of a polyestercarbonate ("PPC") and polycarbonate. This blend of PPC and polycarbonate provides a tie-layer with increased heat deflection temperature (HDT), ductility, increased adhesion between the weatherable coating layer and a substrate layer of polycarbonate with excellent clarity, physical and mechanical properties. In one embodiment, the blend comprises 10 to 100 wt. % PPC and about 0 to 90 wt. % of the polycarbonate. In one embodiment, the copolyestercarbonates are comprised of aromatic BPA polycarbonate units and aromatic polyester units. In embodiments wherein the polyestercarbonate comprises about 20 wt % ester or greater and the weight percentage of polyestercarbonate is greater than about 20%, the tie-layer has excellent clarity.

Molded articles or formed parts comprising the multi-layer articles of the reference exhibit surprising weatherability, particularly stability, when exposed to

ultraviolet light for extended periods of time. These articles exhibit the low loss in gloss, low haze formation, and low color shift measured using, for example, the CIE 1976 (CIE LAB) color scale, needed for molded parts used in exterior applications.

In many of the examples, a number of polyestercarbonate and polycarbonate blends are prepared. The blends are tested for clarity, T<sub>g</sub>, heat distortion temperature HDT, and impact strength before being further processed as tie-layers in the multilayer article of the reference.

The results of the test are presented in Table 2. Examples 12-22 are blends of either PPC/PCE and ITR, with the weight % of PPC or PCE is as shown, and ITR resins making up the balance. "PPC" is a copolyestercarbonate comprising isophthalate and terephthalate ester units, with 93% isophthalate and 7% terephthalate, and with the BPA arylates units comprising 80% of the weight. "PCE" is a copolyestercarbonate comprising isophthalate and terephthalate ester units, with 50% isophthalate and 50% terephthalate, and with the BPA arylate units comprising 60% of the weight. The resultant blends are injection molded at 620.degree. F. into test specimens 1/8" thick. N.I. is notched izod impact strength measured according to ASTM D256 at room temperature (RT of 23.degree. C.). Color (clarity) data is measured using a MacBeth ColorEye 700A colorimeter. The glass transition temperature T<sub>g</sub> is measured at 20.degree. C./min. on the 2nd heat cycle.

In this example, multilayer articles in the form of solid sheets, twin and triple walled panels, and multi-wall sections (collectively, MWS) are produced by a coextrusion process, with the weatherable layer comprising resorcinol arylate-containing block copolyester-carbonate (ITR) being used as a coating on either one or both sides of the MWS. The substrate layer or the MWS is a base sheet of thermoplastic polycarbonate

The device for coextruding the multilayer article, i.e., the MWS, of the reference consists of a main with a degassing facility, a coextrusion adapter

(feedblock system), a coextruder for applying the weatherable coating layer comprising ITR, a sheet extrusion die, a sizing device, a roller track, a pull-off device, a device for cutting into lengths (saw), and a delivery table.

In the examples, the polycarbonate granules forming the base sheets are fed to the filling hopper of the main extruder, and the ITR resin for the weatherable coating layer is fed to that of the coextruder. Melting and conveying of the respective material are effected in the respective cylinder/screw plasticizing system. The two molten materials are brought together in the coextrusion adapter and formed a composite after leaving the extrusion die and cooling in the sizing device. The other devices are employed for the transport, cutting into lengths and deposition of the extruded sheets.

Using a coextruder with an adapter/feedblock, a three-layer sheet is prepared. It is observed that the sheet having outer layers of resorcinol arylate polymer forms better than sheet having outer layers of polycarbonate film. Additionally, the surface stretching after forming is very uniform with no tearing occurs. There is no delamination at any point. Furthermore, the impact strength is the same or as expected of a similar sheet having polycarbonate.

In the example, the multilayer article assembly comprised a layer of copolyestercarbonate film and a layer of polycarbonate film. The copolyestercarbonate film comprised a copolyestercarbonate with arylate structural units derived from unsubstituted resorcinol, isophthalic acid, and terephthalic acid, and carbonate structural units derived from bisphenol A. The polycarbonate film comprised bisphenol A polycarbonate.

In each example the adhesion strength of the copolyestercarbonate -polycarbonate film assembly to the cured thermoset substrate was found to be excellent.

Each of the references discloses a composition which may include a polycarbonate

prepared from the same components as claimed by applicants. Any properties or characteristics inherent in the prior art, e.g. ratio of an amount of proton....calculated...integral values of a signal detected by an H-NMR spectra etc...,although unobserved, unmentioned or detected by the reference, would still anticipate the claimed invention. Note In re Swinehart, 169 USPQ 226. "It is elementary that the mere recitation of a newly discovered...property, inherently possessed by things in the prior art, does not cause claim drawn to those things ". Since the disclosed viscosity-average molecular weight of 17000 to 40000 are expressed differently , the viscosities and/or the molecular weights nevertheless appear to overlap those claimed and thus are not distinguishable over the prior art. In view of the above, there appears to be no significant difference between the reference(s) and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

### **Correspondence**

**Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is

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571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is ( **571-272-1700**).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tmb

  
**Examiner Terressa Boykin**  
**Primary Examiner**  
**Art Unit 1711**